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10/725,773	12/01/2003	Jerome Chan Lee	57450-1161	3812

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EXAMINER	
YANG, RYAN R	

ART UNIT	PAPER NUMBER
2628	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

klpatent@kramerlevin.com

Office Action Summary	Application No.	Applicant(s)	
	10/725,773	LEE ET AL.	
	Examiner	Art Unit	
	Ryan R. Yang	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26,30-37 and 39-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *39* is/are allowed.

6)☒ Claim(s) *1-26,30-35,37 and 40-44* is/are rejected.

7)☒ Claim(s) *36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communications: Supplemental Amendment, filed on 12/12/2007. This action is final.

2. Claims 1-26, 30-37 and 39-44 are pending in this application. Claims 1, 30, 32, 39, 43 and 44 are independent claims. In the Amendment, filed on 10/1/2007, claims 1, 3, 5-7, 23, 30 and 32-33 and were amended, claims 27-29 and 38 were canceled, and claims and claims 40-42 were added. In the Supplemental Amendment, filed 12/12/2007, claims 1, 3, 5-8, 30, 32 and 33 were amended, and claims 43 and 44 were added.

3. This application claims Provisional Application No. 60/505,345, 60/505,346 and 60/505,344, all filed 11/29/2002.

4. The present title of the invention is "Method and system for scaling control in 3D displays ("Zoom Slider") as filed originally.

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims1, 5-15, 17-20, 22, 24-25, 30-33, 35, 37, 40 and 42-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Reid et al (6,028,645).

Regarding claim 1, Reid et al, hereinafter Reid, discloses a method for controlling the scaling of a 3D computer model comprising one or more 3D objects in a 3D display system, comprising:

activating a zoom mode in response to user input ("Once a user has defined the control points 12, 22-24 then the motion path is calculated", column 2, line 57-58, which inherently starts a zoom mode);

obtaining a user's viewpoint (Figure 3, point 24 is a user's viewpoint)

automatically selecting a model zoom point on a three-dimensional object in the model as a function of the user's viewpoint and the 3D position(s) of one or more objects in the model ("A control point 12 has centered thereabouts rectangular video image 13", column 2, line 42-43);

setting a 3D scaling factor and scaling the model in response to user input (by selecting a plurality of control points, it is inherently setting a scaling factor); and

automatically moving the model zoom point from its original position toward a system, application, or user defined optimum viewing point according to a defined ("Video image 13, 14 is manipulated so that it substantially fills the entire window 25 area as the window is rotated along the motion path", column 3, line 10-13").

7. As per claim 5, Reid demonstrated all the elements as disclosed in claim 1, and further discloses selection of the model zoom point is effected by implementing a defined algorithm operating on the user's viewpoint and one of (i) all of the 3D objects nad (ii) the center of all visible objects (where automatically interpolating by a CPU to provide smooth transitions between the key frames is a defined algorithm (column 3, line 3-4), and the control point 12 is centered about an image).

8. As per claim 6, Reid demonstrated all the elements as disclosed in claim 1, and further discloses selection of the model zoom point is further effected by one of a user

signaling when a tool moving in the 3D display has its tip at the desired point relative to the model (Figure 3, item 12) and a user moving the model relative to the automatically selected model zoom point (Figure 3, the plurality of points along 15).

9. As per claim 7, Reid demonstrated all the elements as disclosed in claim 1, and further discloses the zoom point is automatically selected as one of (i) the nearest model point visible to the user along the z-axis of the display space (Figure 3, item 12) and (ii) a visible point in a crop box on the z-axis of the display space, wherein the z-axis is set to run through the optimum viewing point (Figure 3, item 21 is a crop box and 24 is an optimum viewing point).

10. As per claim 8, Reid demonstrated all the elements as disclosed in claim 1, and further discloses that the model zoom point is automatically selected as a point in a crop box on the z-axis of the display space, wherein the z-axis is set so as to run through an optimum viewing point ("The window thus zooms in and out of the effected area as the image changes orientation and/or size", column 3, line 13-15).

11. As per claim 9, Reid demonstrated all the elements as disclosed in claim 7, and further discloses that model zoom point is one of the nearest such point to the user's viewpoint, the farthest such point from the user's viewpoint, and the centroid of a collection of such points that are in the crop box and on the z-axis. (Figure 4, item 12 is nearest to the user's view point and x-y plan is z-axis).

12. As per claim 10, Reid discloses that the model zoom point is selected as a point in a crop box and in a magnification region (Figure 4, item 12).

13. Regarding claim 11, Reid discloses that the model zoom point is also a visible model point which is nearest to either the optimum viewing point or a user's viewpoint. (Figure 4, item 12).

14. As per claims 12-14, Reid discloses that the magnification region is made visible to a user as an opening in a contextual structure, which contextual structure is a plane with a hole, wherein the hole's shape is substantially one of a circle, an oval, an ellipse, a square, a rectangle, a triangle, a trapezoid, or any regular polygon. (Figure 4, item 21).

15. Regarding claim 15, Reid demonstrated all the elements as disclosed in claim 8, and further discloses that a user causes the motion of the displayed model or models necessary to produce said visible model point that is inside the crop box and on said z-axis. (Figure 4, item 21).

16. Regarding claim 17, Reid discloses that the location of said model zoom point is indicated to a user by the display of a small structure centered thereon (Figure 4, item 12).

17. Regarding claim 18, Reid discloses that small structure is a small cross composed of lines and triangles, including or not including as a visible point the model zoom point. (Figure 4, item 12)

18. Regarding claim 19, Reid discloses that the attention of the user is directed to the location of the model zoom point by a larger displayed contextual structure (Figure 4, item 21).

19. Regarding claim 20, Reid discloses that contextual structure is a plane with a hole surrounding the model zoom point (Figure 4, item 21).

20. Regarding claim 22, Reid discloses that the zoom operation can be set to be implemented stepwisely or smoothly, as controlled by the user. (Figure 3, where the control points could be controlled the zooming stepwise or smoothly).

21. Regarding claim 24, Reid discloses that the zoom operation and the motion of the model zoom point towards the optimum viewing point are implemented substantially simultaneously (Figure 4, since the zooming is performed along with the image moving along the selected viewing points).

22. Regarding claim 25, Reid discloses that the correspondence between the degree of zoom and the motion of the model zoom point is linear, adjusted to display the model without zoom with the model zoom point at its originally selected location and to display the model at a maximum degree of zoom with the model zoom point at the optimum viewing point (Figure 3, at 24 where the image is zoomed to maximum; “rotation angles and x-y scaling parameters are set at the control points by the user and these parameters are interpolated to provide smooth transitions from control point to control point”, column 2, line 59-62)

23. Regarding claims 30 and 31, Reid discloses a computer program product (Figure 5, item 43 which also inherently contains the program code) comprising program code to perform the method disclosed in claims 1 and 24, therefore is similarly rejected as claims 1 and 24 respectively.

24. Regarding claims 32 and 33, Reid discloses a computer program storage device readable by a machine (Figure 5, item 43) comprising the method disclosed in claims 1 and 24, therefore is similarly rejected as claims 1 and 24 respectively.

25. As per claim 35, Reid demonstrated all the elements as disclosed in claim 1, and further discloses said defined algorithm specifies a translation of the model space within the display space (Figure 3 where the translation and rotation of image is translation of the model space with the display space).

26. Regarding claim 37, Reid demonstrated all the elements as disclosed in claim 1, and further discloses the scaling of the model and corresponding automatic moving of the model zoom point are effected at least one of substantially instantaneously, at a predetermined rate, and at a rate controlled by a user (since the use sets the control points, rotation and scaling parameters, column 2, line 57-62).

27. As per claim 40, Reid demonstrated all the elements as disclosed in claim 1, and further discloses the model zoom point is selected by applying defined rules to visible points of a displayed model that lie in a central viewing area (Figure 3 where the use sets the control points, rotation and scaling parameters, column 2, line 57-62).

28. As per claim 42, Reid demonstrated all the elements as disclosed in claim 1, and further discloses allowing a user to modify at least one of the model zoom point and the selected three-dimensional object (the user is allowed to adjust parameters, column 3, line 15-16).

29. As per claims 43 and 44, since the claim limitations are similar to claims 1 and 7 combined, they are similarly rejected as claims 1 and 7 combined.

Claim Rejections - 35 USC § 103

Claims 3, 23, 26 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reid et al (6,028,645).

30. Regarding claim 3, Reid demonstrated all the elements as disclosed in claim 1.

As for said method is implemented by a user via a mouse or other 2D position calculating computer input device, since a mouse is notoriously well known in the art to input information, it would have been obvious to one of ordinary skill in the art to use mouse in order to easily input information.

31. Regarding claim 23, Reid demonstrated all the elements as disclosed in claim 22.

As for each of the setting of the zoom scale factor, said stepwise or smooth implementation of the zoom operation, and user definition of an optimum viewing point can be controlled by one or more of the user's voice, a mouse, a 3D tool or other device, a slider, a wheel, and increment/decrement buttons, since the input methods are notoriously well known in the art (Official Notice), it would have been obvious to one of ordinary skill in the art to use any one of input methods for the purpose easily selecting a viewing point.

32. Regarding claim 26, Reid demonstrated all the elements as disclosed in claim 1. As for automatically activating a clipping box in the display for values above a defined threshold of a system load estimate, the method is notoriously well known in the art (Official Notice). It would have been obvious to one of ordinary skill in the art to clip the image for the purpose of limiting the processing load of the image.

33. As per claim 41, Reid demonstrated all the elements as disclosed in claim 40. As for if no said points are available, further comprising prompting a user to move the model until such points are available, since the method is notorious well known in the art (Official Notice), it would have been obvious to one of ordinary skill in the art to implement the option for the purpose of making the selection available.

34. Claim 2, 4, 21 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reid et al (6,028,645) in view of (Kockro et al. "Planning and simulation neurosurgery in a virtual reality environment", Neurosurgery).

35. Regarding claim 2, Reid demonstrated all the elements as disclosed in claim 1.

It is noted that Reid does not explicitly discloses that display system is stereoscopic, however, this is known in the art as taught by Kockro. Kockro discloses a 3D maneuvering method in which the image is a stereoscopic image (See Fig 1).

Thus, it would have been obvious to incorporate the teaching of Kockro into Reid because discloses a method of optimizing a view and Kockro disclose the image could be a stereoscopic image for the purpose of giving a realistic impression.

36. Regarding claim 4, Reid demonstrated all the elements as disclosed in claim 4.

It is noted Reid does not explicitly disclose input via a sensor which can move in three dimensions, however, this is known in the art as taught by Kockro Kockro discloses an image displaying method in which a 3D input device is used (See Fig 1, where the stylus is a 3D input device).

Thus, it would have been obvious to incorporate the teaching of Kockro into Reid because discloses a method of optimizing a view and Kockro disclose the image could be a stereoscopic image for the purpose of giving a realistic impression.

37. Regarding claim 21, Reid demonstrated all the elements as disclosed in claim 20.

It is noted Reid does not explicitly disclose said plane is so rendered in a stereoscopic display as to appear to be translucently visible through other structures imaged in the display, regardless of whether said other structures are otherwise shown as opaque or translucent, however, this is known in the art as taught by Kockro. Kockro discloses an image display method in which an image is transparently visible through other structures imaged in the display (See Fig 1).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Kockro into Reid because Reid discloses a method of displaying image and Kocker discloses the image could be viewed as a stereoscope image through another structure for the purpose of having a more realistic view.

38. As per claim 34, Reid demonstrated all the elements as disclosed in claim 12, and further discloses the elements similar to claim 21, therefore is similarly rejected as claim 21.

39. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reid et al. (6,028,645) in view of Chen et al (5,588,098).

Regarding claim 16, Reid demonstrated all the elements as disclosed in claim 15.

It is noted Reid does not explicitly disclose the user causes said motion of the displayed model or models by at least one of grasping with a three-dimensional tool and dragging with a mouse, however, this is known in the art as taught by Chen et al., hereinafter Chen. Chen discloses a image maneuvering method in which a mouse is used to drag an object (column 4, line 62- column 5, line 9).

Thus, it would have been obvious to incorporate the teaching of Chen into Reid because Reid discloses a method of manipulating an image and Chen discloses then image could be dragged by a mouse device for the purpose in easily maneuver an image.

Allowable Subject Matter

40. Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 39 is allowed.

The following is a statement of reasons for the indication of allowable subject matter:

As per claims 36 and 39, the closest prior art by Reid or Lockro do not explicitly disclose a translation algorithm of specified limitations.

Response to Arguments

41. Applicant's arguments with respect to claims 1-26, 30-35 and 37 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

42. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Inquiries

43. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan R. Yang whose telephone number is (571) 272-7666. The examiner can normally be reached on M-F 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ryan R Yang/
Primary Examiner, Art Unit 2628
April 8, 2008